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CAMPAIGN AGAINST WHITE-FRINGED BEETLES
STEPPED UP BY FEDERAL AND STATE AGENCIES

Federal and State plant quarantine officials have mapped out an intensive campaign against the white-fringed beetle (1)*, a destructive crop pest that apparently was brought here in products imported from South America at least 15 years ago. Plant quarantines in force since 1937, the year following its discovery in this country, have kept this beetle inside a relatively small area in the United States - only about 215,000 acres in 114 counties in Alabama, Florida, Georgia, Louisiana, Mississippi, and the Carolinas (2)*. Suppression measures, made increasingly effective by research that established the insecticidal value of DDT against the beetles and the development of new methods and equipment for applying it, have greatly reduced the numbers of the insect within the infested territory. Operations in 1949 will follow the same general plan as last year's, but on a larger scale, according to B. M. Gaddis, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, who is in charge of them.

Fortunately for the ultimate success of the effort to suppress it, this alien pest cannot fly. Its only chance to travel very far is to hitch a ride, either in the egg or adult stage with infested materials, or in the larval stage in soil, perhaps around roots of plants or nursery stock. Unfortunately, however, it multiplies very rapidly. In the first place, this beetle is parthenogenetic. That is, none are males, but all are females, each capable of laying eggs from which hatch larvae that develop into a new generation of fatherless females to perpetuate the species. Thus a single beetle, whether in the egg, larval, pupal, or adult stage, can readily start a new infestation whenever conditions are favorable. In the second place, the beetles feed on a great many different kinds of plants - the adults on 170 kinds and the larvae on 240 kinds. The number of eggs the adults lay depends on the kind of food available. Broad-leaved plants, like peanuts, velvetbeans, and cotton, provide what it takes for copious egg production. Narrow-leaved plants, like grass, do not. Furthermore, the adult's retiring nature makes difficult its detection on plants or other articles that offer it a free ride to new territory. Although there are three species of white-fringed beetles and five races of one of these species, the life histories, habits, and control of all of them are in general about the same.

The Gulfport, Miss., and Macon, Ga., field stations of the Bureau of Entomology and Plant Quarantine are headquarters for Operation White-Fringed Beetle. Federal and State quarantines are in effect throughout the territory shown by the last surveys to be infested (3)*. No materials capable of carrying the pest will be permitted to cross the quarantine lines unless they are officially pronounced beetle free. To make nursery stock eligible for certification, nurserymen will treat their soil with DDT and spray all nursery foliage and surroundings with DDT throughout the summer. Some already have surrounded their premises with a tight metal barricade and have fumigated the soil within (4)*. Nursery stock in infested areas may be made safe for shipment by fumigation (5)* or by washing the roots free from soil (6)*. Anything that might carry the beetle in any of its stages to new areas must be so handled or treated as to prevent such spread.

DDT used against the white-fringed beetle may be in the form of a dust, an emulsion, or a suspension, and it may be applied as a soil treatment or as a foliage treatment. As a soil treatment for cropland, it is sprayed or dusted, at the rate of 10 pounds to the acre, over the surface of the ground and immediately worked into the soil, where its residual effect will continue to kill larvae for at least four years. In nurseries the rate of soil application is 50 pounds an acre. As a foliage treatment, it is applied lightly to plants to destroy the adults before they can lay new batches of eggs. Several applications are required during the summer.

Dusts are applied by hand or with any of several types of fertilizer distributors, including one attached to a standard grain drill. Emulsions and suspensions are applied by concentrate-spray machines, especially devised by the Department of Agriculture. About 48 of these machines, some mounted on jeeps (7)* and some on tractors (8)*, are ready for the 1949 campaign at Gulfport and Macon. Also in readiness are four airplanes, each equipped with a tank for holding DDT (9)* and special nozzles for distributing it (10)*. In 1948 these planes treated 12,057 acres with DDT (11)*.

Farmers can protect their own croplands by applying DDT to their soil and working into it DDT applied by both themselves and Federal and State agencies. Federal and State agencies will dust and spray vast acreages of wasteland, certain crops, railroad rights of way, and industrial and other properties that constitute a beetle-spread hazard. Crops for human consumption or livestock feed will not be treated with DDT.

Development of farm and nursery control and special measures to cut down beetle numbers, Mr. Gaddis says, has provided farmers and nurserymen with effective treatments at reasonable cost. Also it has greatly reduced the threat of serious economic damage both throughout the present range of these beetles and in areas where they have not yet appeared.

*Numbers in parentheses refer to pictures on other side, 8 by 10 glossy prints of which are free to writers and editors on request to Press Service, Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

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